

1 **CLAIMS**

2  
3 1. A programming interface embodied on one or more computer  
4 readable media, comprising:

5 a first group of services related to generating graphical objects;

6 a second group of services related to formatting content; and

7 a third group of services related to creating components of the graphical  
8 objects.

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10 2. A programming interface as recited in claim 1, wherein the first  
11 group of services, the second group of services and the third group of services  
12 share a common programming model.

13  
14 3. A programming interface as recited in claim 1, wherein the first  
15 group of services, the second group of services and the third group of services  
16 utilize a common markup language.

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18 4. A programming interface as recited in claim 1, wherein the first  
19 group of services, the second group of services and the third group of services  
20 share a common event system.

21  
22 5. A programming interface as recited in claim 1, wherein the first  
23 group of services, the second group of services and the third group of services  
24 share a common property definition system.  
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1           6.    A programming interface as recited in claim 1, wherein the first  
2 group of services, the second group of services and the third group of services  
3 share a common input paradigm.

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5           7.    A programming interface as recited in claim 1, wherein the first  
6 group of services, the second group of services and the third group of services  
7 share a common system for nesting elements associated with a particular group of  
8 services within elements associated with another group of services.

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10          8.    A programming interface as recited in claim 1, wherein the first  
11 group of services includes a service that determines an appearance of the graphical  
12 objects.

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14          9.    A programming interface as recited in claim 1, wherein the first  
15 group of services includes a service that determines a behavior of the graphical  
16 objects.

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18          10.   A programming interface as recited in claim 1, wherein the first  
19 group of services includes a service that determines an arrangement of the  
20 graphical objects.

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22          11.   A programming interface as recited in claim 1, wherein the first  
23 group of services includes a plurality of nested elements that define the graphical  
24 objects.

1           **12.**    A programming interface as recited in claim 1, wherein the  
2 graphical objects are comprised of one or more elements defined by vector  
3 graphics.

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5           **13.**    A programming interface as recited in claim 1, wherein the first  
6 group of services can define window properties in a markup language without  
7 launching a new window.

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9           **14.**    A programming interface as recited in claim 1, wherein the first  
10 group of services generate a user interface containing a plurality of graphical  
11 objects.

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13           **15.**    A programming interface as recited in claim 1, wherein the second  
14 group of services arrange the graphical objects.

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16           **16.**    A software architecture comprising the programming interface as  
17 recited in claim 1.

1           **17.**    An application program interface embodied on one or more  
2 computer readable media, comprising:

3               a first group of services related to generating graphical objects;  
4               a second group of services related to formatting content; and  
5               a third group of services related to creating components of the graphical  
6 objects, wherein the first group of services, the second group of services and the  
7 third group of services share a common programming model.

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9           **18.**    An application program interface as recited in claim 17, wherein the  
10 first group of services, the second group of services and the third group of services  
11 utilize a common markup language.

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13           **19.**    An application program interface as recited in claim 17, wherein the  
14 third group of services includes services to generate geometric shapes.

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16           **20.**    An application program interface as recited in claim 17, wherein the  
17 second group of services includes arranging a plurality of data elements.

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19           **21.**    An application program interface as recited in claim 17, wherein the  
20 first group of services includes:

21               a service that determines an appearance of a graphical object; and  
22               a service that determines a behavior of the graphical object.

1           **22.**     An application program interface as recited in claim 17, wherein the  
2 first group of services includes a service that defines window properties in a  
3 markup language without launching a new window.  
4

5           **23.**     A computer system including one or more microprocessors and one  
6 or more software programs, the one or more software programs utilizing a  
7 programming interface to request services from an operating system, the  
8 programming interface including separate commands to request services  
9 consisting of the following groups of services:

10           a first group of services for generating graphical objects; and

11           a second group of services for creating components of the graphical objects,  
12 wherein the first group of services and the second group of services share a  
13 common programming model.  
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15           **24.**     A computer system as recited in claim 23, wherein the first group of  
16 services includes:

17           a service for defining an appearance of the graphical objects; and

18           a service for defining an arrangement of the graphical objects.  
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20           **25.**     A computer system as recited in claim 23, wherein the second group  
21 of services includes services to generate a plurality of geometric shapes.  
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1       **26.**     A method comprising:

2       calling one or more first functions to facilitate generating graphical objects;

3       and

4       calling one or more second functions to facilitate formatting content,

5       wherein the first functions and the second functions share a common programming  
6       model.

7  
8       **27.**     A method as recited in claim 26, further including calling one or

9       more third functions to facilitate creating components of the graphical objects.

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11       **28.**     A method as recited in claim 26, further including calling one or

12       more third functions to facilitate generating geometric shapes contained in the  
13       graphical objects.

14  
15       **29.**     A method as recited in claim 26, wherein the first functions

16       facilitate:

17       defining window properties in a markup language without launching a new

18       window; and

19       generating a user interface containing a plurality of graphical objects.  
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1           **30.**    A system comprising:

2               means for exposing a first set of functions that enable generating graphical  
3 objects; and

4               means for exposing a second set of functions that enable creating  
5 components of the graphical objects, wherein the components of the graphical  
6 objects include a plurality of geometric shapes, and wherein the first set of  
7 functions and the second set of functions share a common programming model.

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9           **31.**    A system as recited in claim 30, wherein the second set of functions  
10 further enable arrangement of the geometric shapes on a page to be rendered.

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12           **32.**    A system as recited in claim 30, further comprising means for  
13 exposing a third set of functions that enable formatting content for display.

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15           **33.**    A system as recited in claim 30, wherein the first set of functions  
16 and the second set of functions utilize a common markup language.

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18           **34.**    A system as recited in claim 30, wherein the first set of functions  
19 and the second set of functions share a common event system and a common  
20 property definition system.